REMARKS

I. General

The issues outstanding in the instant application are as follows:

- Claims 1, 4, 6, 7, 11, 12, 15, 16 and 19 stand rejected under 35 U.S.C. 102(e) as anticipated by Blair et al., U.S. Pub. No. 2002/0173271 (hereinafter, *Blair*);

- Claim 2 stands rejected under 35 U.S.C. §103(a) as unpatentable over *Blair* in view of Poyhonen, WO 93/22850 (hereinafter, *Poyhonen*);

- Claims 3, 9 and 18 stand rejected under 35 U.S.C. §103(a) as unpatentable over *Blair* in view of Petranovich et al., U.S. Pat. No. 5,946,624 (hereinafter, *Petranovich*);

- Claims 5 , 8 and 20 stand rejected under 35 U.S.C. §103(a) as unpatentable over *Blair* in view of *Hiramatsu*, U.S. Pat. No. 6,463,261 (hereinafter, *Hiramatsu*);

- Claim 10 stands rejected under 35 U.S.C. §103(a) as unpatentable over *Blair* in view of Smith et al., U.S. Pat. No. 6,366,573 (hereinafter, *Smith*);

- Claim 13 stands rejected under 35 U.S.C. §103(a) as unpatentable over *Blair* in view of Lundby, U. S. Pat. No. 6,356,528 (hereinafter, *Lundby*);

- Claim 14 stands rejected under 35 U.S.C. §103(a) as unpatentable over *Blair* in view of Chen et al., U.S. Pat. No. 6,215,777 (hereinafter, *Chen*); and

- Claim 17 stands rejected under 35 U.S.C. §103(a) as unpatentable over *Blair* in view of Lund, U.S. Pat. No. 5,844,934 (hereinafter, *Lund*).

Applicants hereby traverse the outstanding rejections of the claims, and request reconsideration and withdrawal of the outstanding rejections in light of the amendments and remarks contained herein. Claim 19 is amended herein in form to emphasize the nature of the invention. Claims 1-20 are currently pending in this application.

II. Rejection under 35 U.S.C. §102(e)

Claims 1, 4, 6, 7, 11, 12, 15, 16 and 19 are rejected under 35 U.S.C. §102(e) as being anticipated by *Blair*. Applicants respectfully traverse this anticipation rejection.

The recited reference does not teach all claimed limitations.

It is well settled that to anticipate a claim, the reference must teach every element of the claim, see M.P.E.P. §2131. Moreover, in order for a prior art reference to be anticipatory under 35 U.S.C. §102 with respect to a claim, "[t]he elements must be arranged as required by the claim", see M.P.E.P. §2131, citing *In re Bond*, 15 U.S.P.Q.2d 1566 (Fed. Cir. 1990). Furthermore, in order for a prior art reference to be anticipatory under 35 U.S.C. §102 with respect to a claim, "[t]he identical invention must be shown in as complete detail as is contained in the . . . claim", see M.P.E.P. §2131, citing *Richardson v. Suzuki Motor Co.*, 9 U.S.P.Q.2d 1913 (Fed. Cir. 1989). Applicants respectfully assert that the rejection does not satisfy these requirements.

Independent claim 1 defines "detecting and characterizing RF interference" and "adjusting the RF transmission to avoid said interference" (emphasis added). *Blair* does not disclose at least the emphasized limitations. Generally, the disclosure of *Blair* is directed to selecting the best channel for use in wireless networking systems governed by the IEEE 802.11(b) specification. *Blair* is one way of implementing Dynamic Frequency Selection (DFS) (now a part of the IEEE 802.11(h) specification).

Claim 1 calls for "... characterizing RF interference", which is discussed in the specification beginning on page 11, line 9. Therein, the interference is described as having various characteristics such as "including narrow band interference, box 204-1, impinging on a particular system channel; periodic or intermittent narrow band interference, occurring at determinable time intervals or for a determinable duration, box 204-2; wideband interference, interfering with more than one channel 204-3; and periodic or intermittent wideband interference occurring for a determinable time interval, such as a radar pulse, box 204-4". *Blair* fails to teach any such "characterizing RF interference" (emphasis added).

Blair can at best be said to only teach detecting RF interference in a static manner by measuring RF energy or a proxy, such as signal strength or quality of service. Further, *Blair*

can at best be said to characterize RF interference only as DSSS or non-DSSS for the purpose of establishing different threshold values determining whether a channel is available or not. *Blair* does not attempt to characterize interference according to further parameters such as periodicity, directionality or bandwidth. As discussed in paragraph 43, *Blair* determines if an extraneous signal is a DSSS signal or "non-DSSS interference". In other words, *Blair* is unaware of the type or character of interference beyond this designation of extraneous DSSS signals or some sort of interference, broadly designated non-DSSS interference which is not further characterized. Blair does not detect and characterize RF interference but rather determines signal strength, quality of service and makes the aforementioned DSSS/non-DSSS determination.

Furthermore, *Blair* fails to disclose "adjusting the RF transmission to avoid said interference" as recited in claim 1. As pointed out by the Office Action in paragraph 46, *Blair* teaches "Those skilled in the art understand that only certain modulation schemes, data rates and symbol rates may be used for a given set of parameters. As a result, the channels selected for transmission of the data should not only be found to be desirable, but also available for the rate or modulation scheme preferable for the outgoing data".

However, as discussed in the present specification beginning on page 11, line 4 and as shown in FIGURE 2 "adjusting the RF transmission to avoid said interference" might include, not only a frequency change, but also other independently implemented adjustments to the RF transmissions. These independent adjustments also include, but are not limited to, time slot adjustments and/or deletions; adaptive modulation; a change in data channel width; a change in data code rate; a change in signal/antenna polarity; and/or use of a separate antenna and/or hub.

Based on the aforementioned determination of presumed interference, *Blair* changes channel and/or makes some modifications to a channel constrained by user selected defaults. *Blair* only teaches a method for selecting a channel or group of adjacent channels in the presence of a narrowband interferer. Blair does not teach how to proceed in the presence of a hi power, broadband interferer. *Blair* only operates in the spectrum domain whereas the present invention is free to operate in multiple domains including the time and physical domains, as well as the spectrum domain. Thus, *Blair* only discloses channel selection

constrained by selected data rate and/or modulation, not comprehensive adjustment of an RF transmission to avoid interference.

Independent claim 7, as amended, recites "calculating characteristics of RF interference within a band of interest of an unlicensed RF band to arrive at an interference profile" and "adjusting desired RF transmissions to accommodate said interference profile" (emphasis added). *Blair* does not disclose these limitations. Furthermore, as discussed above in relation to claim 1, *Blair* determines whether interference is DSSS or non-DSSS interference and is unaware of the type or character of non-DSSS interference. In paragraph 44 *Blair* teaches that a quality of service (QOS) threshold is used to determine if DSSS interference makes use of a channel undesirable. Conversely, present claim 7 calls for "calculating characteristics of RF interference". Also, as pointed out above in relation to claim 1, *Blair* only teaches channel selection based interference mitigation, constrained by a preselected data rate and/or modulation, whereas claim 7 recites a comprehensive "adjusting desired RF transmissions".

Furthermore, *Blair* fails to teach the claimed "interference profile" of claim 7. *Blair* determines whether interference is DSSS or on-DSSS and whether a channel with DSSS interference is desirable for use. *Blair* never creates or arrives at an interference profile as recited in claim 7. *Blair* could, at best, only be said to determine various thresholds of interference and provide those to a channel information table. (See paragraphs 42-44 of *Blair*.) Therefore, *Blair* not only does not teach the claimed "to arrive at an interference profile" (emphasis added) but *Blair* cannot teach "adjusting desired RF transmissions to accommodate said interference profile".

Independent claim 19, as amended, defines "breaking said extraneous RF signals into interference types", "determining at least one characteristic of said interference..." and "selecting, based on said interference type and said interference characteristics, at least one action to reduce said interference". *Blair* does not disclose at least these limitations. As discussed above, *Blair* only determines whether interference is DSSS or non DSSS. In other words, *Blair* is unaware of the type or character of interference present in extraneous RF signals. *Blair* is only aware of a single attribute of the interference as either DSSS or non-

DSSS. Thus, *Blair* fails to teach both "breaking said extraneous RF signals into interference types" and "determining characteristics of said interference".

Further, *Blair* does not disclose "selecting, based on said interference type and said interference characteristics, at least one action to reduce said interference, said actions comprising: ceasing transmissions on a channel for a time slot conforming to determinable time frames of said periodic interference; ceasing transmissions on a channel for a time slot conforming to determinable time frames of said intermittent interference; adapting modulation of said transmissions; changing code rate of said transmissions; adjusting a time sequence of said transmissions to accommodate said periodic interference; and adjusting a time sequence of said transmissions to accommodate said intermittent interference" as recited by amended claim 19. *Blair* only discloses channel selection for interference mitigation, constrained by selected data rate and/or modulation. Thus, *Blair* does not teach the claimed actions to reduce interference.

Therefore, Applicants respectfully assert that at least for the above reasons independent claims 1, 7 and 19 are patentable over the 35 U.S.C. §102 rejections of record. Furthermore, there are great differences between each of claims 1, 7 and 19 over the prior art of record, and a person of ordinary skill in the art considering the prior art would not find these differences obvious.

Claims 4 and 6 depend directly from independent base claim 1 and claims 11, 12, 15 and 16 depend directly from independent base claim 7. Thus claims 4, 6, 11, 12, 15 and 16 inherit all limitations of their respective base claims. Therefore, claims 4, 6, 11, 12, 15 and 16 set forth features and limitations not recited by *Blair* for the reasons advanced immediately above, and for those reasons alone are patentable over the 35 U.S.C. §102 rejection of record. Furthermore many of dependent claims 4, 6, 11, 12, 15 and 16 define limitations not found in *Blair*.

Claim 4 defines "means for changing modulation rate of said RF data transfer to avoid said interferences"; claim 11 defines "modifying a modulation scheme of said desired RF transmissions [to accommodate an interference profile]"; claim 12 defines "changing code rate of said desired RF transmissions [to accommodate an interference profile]"; and claim 16 defines "changing channel width of said desired RF transmissions". (Emphasis and

bracketed clarifications added.) *Blair* does not disclose these limitations. *Blair* only teaches channel selection for interference mitigation, constrained by selected data rate and/or modulation. *Blair* only discloses use of different modulation schemes (rates) in response to channel changes, not actively changing between modulation or code rates or actively modifying a modulation scheme to avoid interference or to accommodate an interference profile. Thus, *Blair* does not teach the agile claimed "changing modulation rate", "modifying a modulation scheme", "changing code rate", or "changing channel width" for "adjusting ... RF transmissions" (base claims 1 and 7(emphasis added)) to actively avoid interference. Therefore, Applicants respectfully assert that for the above reasons claims 4, 11, 12 and 16 are patentable over the 35 U.S.C. §102 rejection of record.

Further, claim 6 recites "means for analyzing the RF data transfer for characteristics of interference" (emphasis added). In contrast, as pointed out above *Blair*, only teaches determining whether extraneous signals are DSSS or some sort of interference, broadly designated non-DSSS interference and is not further characterized. Thus, *Blair* is unaware of the existence let alone the type or character of interference, other than as DSSS or non-DSSS interference. Characteristics of the interference are not discerned by *Blair* at all.

Thus, Applicants respectfully assert that at least for the above reasons claims 1, 4, 6, 7, 11, 12, 15, 16 and 19 are patentable over the 35 U.S.C. §102 rejection of record.

III. Rejections under 35 U.S.C. §103(a)

Claims 2, 3, 5, 8-10, 13, 14, 17, 18 and 20 stand rejected under 35 U.S.C. §103(a) based on a combination of *Blair* and various other references as indicated above and addressed below. Applicants respectfully traverse these rejections.

A Prima Facie case of obviousness has not been established.

To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art cited must teach or suggest all the claim limitations. See M.P.E.P.

§2143. Without conceding the second criteria, Applicants assert that the various obviousness rejections do not satisfy the first and/or the third criteria.

A. Rejections of claims 3, 5, 8-10, 13, 14, 17, 18 and 20 based on §102 rejection of claims 1, 7 and 19.

1. The recited combination does not teach or suggest all claimed limitations.

The Office Action admits that *Blair* does not teach having various limitations recited in claims 3, 5, 8-10, 13, 14, 17, 18 and 20. The Office Action attempts to cure these deficiencies by introducing the various references identified above, which the Office Action alleges to teach the elements admitted as missing from *Blair*. However, these combinations, as presented, do not teach or suggest all limitations of the claimed invention.

Base claims 1, 7 and 19 are defined as described above. As discussed above, *Blair* does not disclose various limitations of these claims. The secondary references are not relied upon in the Office Action as disclosing the limitations absent from *Blair* discussed above. Therefore, the combination of references do not teach all elements of the claimed invention. Claims 3, 5, 8-10, 13, 14, 17, 18 and 20 depend directly from independent base claims 1, 7 and 19, and thus inherit all limitations of their respective base claims. Therefore, each of claims 3, 5, 8-10, 13, 14, 17, 18 and 20 set forth features and limitations that are not taught by the various recited combinations of *Blair* and the secondary references. Thus, Applicants respectfully assert that for the above reasons claims 3, 5, 8-10, 13, 14, 17, 18 and 20 are patentable over the 35 U.S.C. §103(a) rejections of record. Furthermore, the cited secondary references fail to disclose limitations present in dependent claims 3, 5, 8-10, 13, 14, 17, 18 and 20 as detailed below and/or the Office Action fails to provide sufficient motivation for the various combinations of the cited secondary references with *Blair*.

B. The rejection of claim 2.

Claim 2 stands rejected under 35 U.S.C. §103(a) as being unpatentable over *Blair* in view of *Poyhonen*.

1. The recited combination does not teach or suggest all claimed limitations.

Claim 2 stands rejected under 35 U.S.C. §103(a) as being unpatentable over *Blair* in view of *Poyhonen*. The Office Action admits that *Blair* does not teach "shifting a sequence of time slots". The Office Action attempts to cure this deficiency by introducing *Poyhonen*, which the Office Action alleges to teach having such a "shifting a sequence of time slots". However, this combination, as presented, does not teach or suggest all limitations of the claimed invention.

Claim 2 defines "means for shifting a sequence of RF time slots to avoid said interference". *Poyhonen* does not disclose this limitation. As discussed at page 13, line 2, *Poyhonen's* time slot groups are "used in accordance with predetermined repeated sequence." In contrast, claim 2 discloses "adjusting an RF transmission" (claim 1) by "shifting a sequence of RF time slots to avoid said interference" (claim 2 (emphasis added)), not just setting a predetermined, repeated sequence of time slot groups as taught by *Poyhonen*. Thus, *Poyhonen* does not teach the claimed "means for shifting a sequence of RF time slots to avoid said interference". Therefore, Applicants respectfully assert that at least for the above reasons claim 2 is patentable over the 35 U.S.C. §103(a) rejection of record.

2. The Office Action does not provide the requisite motivation.

As discussed above, the Office Action admits that *Blair* does not teach having "shifting a sequence of time slots". The Office Action attempts to cure this deficiency by introducing *Poyhonen*. The motivation for making the combination was presented as follows:

> "It would have obvious to one of ordinary skill in the art at the time the invention was made to provide the teaching of Poyhonen to the communication system of Blair in order to maximize interference diversity."

It is well settled that the fact that references can be combined or modified is not sufficient to establish a prima facie case of obviousness, M.P.E.P. §2143.01. Such language is merely a statement that the reference can be modified, and does not state any desirability for making the modification. The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the

desirability of the combination. *In re Mills*, 916 F.2d 680, 16 U.S.P.Q.2d 1430 (Fed. Cir. 1990), as cited in M.P.E.P. §2143.01. *Poyhonen* teaches the use of predetermined, repeated "time slot hopping" to mitigate self created interference by commonly controlled/operated cells. In contrast, the present systems and methods deal with a variety of interferences present in an unlicensed RF band data transmission environment, including radar or certain narrow band interferences. Applicants fail to understand how one striving to mitigate interference present in an unlicensed RF band, particularly outside interference, would be motivated to look to art directed to scheduling "time slot hopping" in a licensed RF environment. Thus, the motivation provided by the Examiner is improper and/or insufficient, as the motivation must establish the desirability for making the modification. No valid suggestion has been made as to why a combination of *Blair* and *Poyhonen* is desirable. Therefore, the rejection of claim 2 should be withdrawn.

C. The rejection of claims 3, 9, and 18.

Claims 3, 9, and 18 stand rejected under 35 U.S.C. §103(a) as being unpatentable over *Blair* in view of *Petranovich*.

1. The recited combination does not teach or suggest all claimed limitations.

The Office Action admits that *Blair* does not teach having "skipping or eliminating at least one time period in a sequence of time period". The Office Action attempts to cure this deficiency by introducing *Petranovich*, which the Office Action alleges to teach having "skipping at least one time period in a sequence of time period". However, this combination, as presented, does not teach or suggest all limitations of the claimed invention.

Claim 3 defines "skipping at least one time period in a sequence of time periods to avoid said interference", claim 9 defines "eliminating at least one of said periodic time slots for the duration of said interference", and claim 18 defines "adjusting a time sequence of said desired RF transmissions to accommodate said interference profile". *Petranovich* does not disclose these limitations. As discussed in the abstract, *Petranovich* discloses "synchronized frequency hopping" "at predetermined times" and "at predetermined intervals" that "periodically repeat". Thus, *Petranovich* does not teach the claimed skipping, eliminating or adjusting in response to interference. *Petranovich* only teaches establishing a schedule of frequency changes to accommodate a frequency reuse plan or the like in a regulated

environment. Therefore, Applicants respectfully assert that at least for the above reasons claims 3, 9, and 18 are patentable over the 35 U.S.C. §103(a) rejections of record.

2. The Office Action does not provide the requisite motivation.

As detailed above, the Office Action admits that *Blair* does not teach having "skipping or eliminating at least one time period in a sequence of time period". The Office Action attempts to cure this deficiency by introducing *Petranovich*. The motivation for making the combination was presented as follows:

> "It would have obvious to one of ordinary skill in the art at the time the invention was made to provide the teaching of Petranovich to the communication system of Blair in order to reduce interference."

As discussed earlier, it is well settled that the fact that references can be combined or modified is not sufficient to establish a prima facie case of obviousness. Such language is merely a statement that the reference can be modified, and does not state any desirability for making the modification. The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *Petranovich* teaches the use of predetermined, repeated "frequency hopping" to mitigate self-created interference by commonly controlled cells. In contrast, the present systems and methods deal with a variety of outside interferences present in an unlicensed RF band data transmission environment. Applicants fail to understand how one striving to mitigate interference present in an unlicensed RF band would be motivated to look to art directed to scheduling "frequency hopping" in a licensed RF environment. Thus, the motivation provided by the Examiner is improper and/or insufficient, as the motivation must establish the desirability for making the modification. No valid suggestion has been made as to why a combination of *Blair* and *Petranovich* is desirable. Therefore, the rejections of claims 3, 9, and 18 should be withdrawn.

D. The rejection of claims 5, 8 and 20.

Claims 5, 8 and 20 stand rejected under 35 U.S.C. §103(a) as being unpatentable over *Blair* in view of *Hiramatsu*.

1. The recited combination does not teach or suggest all claimed limitations.

The Office Action admits that *Blair* does not teach "using an addition antenna for detecting interference". The Office Action attempts to cure this deficiency by introducing *Hiramatsu*, which the Office Action alleges to teach having "using an addition antenna 1 of an apparatus (fig. 2) for detecting interference". However, this combination, as presented, does not teach or suggest all limitations of the claimed invention.

Claim 5, as amended, recites "wherein said means for detecting is a colocated antenna separate from the antennas used to effect said RF data transfer" ; claim 8 defines "receiving on an antenna separate from the antenna used for said RF transmission at least a portion of said interference, said portion having energy characteristics different from said desired RF transmissions"; and Claim 20 defines "receiving on an antenna separate from the antenna used for said RF transmissions at least a portion of said extraneous RF signals, said portion having energy characteristics different from said desired RF transmissions". (Emphasis added.). *Hiramatsu* does not disclose at least these limitations.

In its discussion of FIGURE 2, which was cited by the Office Action as showing separate antennas for reception of interference *Hiramatsu* describes antenna 1 as a reception antenna and antenna 8 as a transmission antenna. Also *Hiramatsu* states "a signal of the interference mobile station and a signal of the desired mobile station are received from reception antenna 1". Thus, *Hiramatsu* does not teach the claimed separate antenna, separate from the antennas used to effect RF data transfers, to detect interference.

Turning specifically to claims 8 and 20 , as noted above claim 8 recites "said portion having energy characteristics different from said desired RF transmissions" and claim 20 recites "said portion [of interference] having energy characteristics different from said desired RF transmissions". *Hiramatsu* does not teach the claimed reception of interference with characteristics different from desired RF transmissions. Hiramatsu only teaches reception of similar signals, signal of a desired mobile station and a signal of the interference mobile station, on a same antenna, antenna 1.

Therefore, Applicants respectfully assert that at least for the above reasons claims 5, 8 and 20 are patentable over the 35 U.S.C. §103(a) rejection of record.

2. The Office Action does not provide the requisite motivation.

The Office Action admits that *Blair* does not teach "using an addition antenna". The Office Action attempts to cure this deficiency by introducing *Hiramatsu*. The motivation for making the combination was presented as follows:

> "It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teaching of Hiramatsu to the communication system of Blair in order to eliminate interference in the system."

As discussed above, it is well settled that the fact that references can be combined or modified is not sufficient to establish a prima facie case of obviousness. Such language is merely a statement that the reference can be modified, and does not state any desirability for making the modification. The motivation in order to eliminate interference in the system is illogical. The addition of the antenna of Hiramatsu does nothing to eliminate interference from the system of *Blair*. The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. For at least these reasons, the motivation provided by the Examiner is improper and/or insufficient, as the motivation must establish the desirability for making the modification. No valid suggestion has been made as to why a combination of *Blair* and *Hiramatsu* is desirable. Therefore, the rejection of claims 5, 8 and 20 should be withdrawn.

E. The rejection of claim 10.

Claim 10 stands rejected under 35 U.S.C. §103(a) as being unpatentable over *Blair* in view of *Smith*.

1. The recited combination does not teach or suggest all claimed limitations.

The Office Action admits that *Blair* does not teach "reducing in time one of the slot during interference". The Office Action attempts to cure this deficiency by introducing *Smith*, which the Office Action alleges to teach "reducing in time one of the slot during

interference". However, this combination, as presented, does not teach or suggest all limitations of the claimed invention.

Claim 10 defines "reducing in time at least one of said periodic time slots for the duration of said interference" (emphasis added). *Smith* does not disclose this limitation. As discussed at column 5, lines 59-61 *Smith* discloses "Longer slots are then allocated to accommodate the weak received powers contending against significant levels of noise and interference" (emphasis added). Thus, *Smith* does not teach the claimed "reducing in time at least one of said periodic time slots for the duration of said interference" (emphasis added). Conversely, at column 5, lines 57-59, *Smith* teaches "Short slots are allocated initially so that the few, strong powers contending against low noise and interference can be eliminated efficiently" (emphasis added). Therefore, *Smith* teaches away from the invention of claim 10. Therefore, Applicants respectfully assert that for at least the above reasons claim 10 is patentable over the 35 U.S.C. §103(a) rejection of record.

2. The Office Action does not provide the requisite motivation.

The Office Action admits that *Blair* does not teach having "reducing in time one of the slot during interference". The Office Action attempts to cure this deficiency by introducing *Smith*, which the Office Action alleges to teach "reducing in time one of the slot during interference". The motivation for making the combination was presented as follows:

> "It would have obvious to one of ordinary skill in the art at the time the invention was made to provide the teaching of Smith to the communication system of *Blair* in order to save processing time."

As noted above, it is well settled that the fact that references can be combined or modified is not sufficient to establish a prima facie case of obviousness. Such language is merely a statement that the reference can be modified, and does not state any desirability for making the modification. The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. As also noted above, *Smith* teaches away from the invention claimed in claim 10. Furthermore, *Smith* deals with answer back pager systems. Applicants fail to understand how one striving to mitigate interference present in an unlicensed RF band would be motivated to look to art directed to pager system operating in regulated RF bands to

mitigate interference. Thus the motivation provided by the Examiner is improper and/or insufficient, as the motivation must establish the desirability for making the modification. No valid suggestion has been made as to why a combination of *Blair* and *Smith* is desirable. Therefore, the rejection of claim 10 should be withdrawn.

F. The rejection of claim 13.

Claim 13 stands rejected under 35 U.S.C. §103(a) as being unpatentable over *Blair* in view of *Lundby*.

1. The recited combination does not teach or suggest all claimed limitations.

The Office Action admits that *Blair* does not teach using a "different antenna for transmission". The Office Action attempts to cure this deficiency by introducing *Lundby*, which the Office action alleges teach "using different antennas 4,6 for transmission". However, this combination, as presented, does not teach or suggest all limitations of the claimed invention.

Claim 13 defines "using a different antenna for said desired RF transmissions [to accommodate said interference profile]". *Lundby*, at column 5, lines 38 through 43, provides:

> "The transmit antennas 4 and 6, could be separated spatially to provide transmit diversity by either placing them in different physical locations, or by using directional antennas pointed in different directions from each other. In an alternate embodiment using multicarrier transmit diversity, a single antenna could be used as the source of the two signals."

At column 7, lines 26 through 44, Lundby states:

> "The exemplary embodiment envisions three alternative methods of separation of the signals transmitted from antennas 4 and 6. In the first embodiment, the signals...are transmitted on the same frequency...on different carrier frequencies...distinguished from one another by introducing a delay prior to transmission..."

However, "diversity" infers that a plurality of antennas are receiving or transmitting the same signals, and that received signals are either summed or the stronger/cleaner signal selected. Whereas *Lundby* specifically states that it is using both antennas, *Lundby's* transmit

diversity fails to reach the limitations of claim 13. Claim 13 defines use of a different antenna, not simultaneous use of a plurality of antennas. Therefore, Applicant respectfully assert that at least for the above reason claim 13 is patentable over the 35 U.S.C. §103(a) rejection of record.

2. The Office Action does not provide the requisite motivation.

As discussed above, the Office Action admits that *Blair* does not teach having "different antenna or different hub". The Office Action attempts to cure this deficiency by introducing Lundby. The only motivation for making the combination was presented as follows:

> "It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teaching of Lundby to the communication system of Blair in order to enhance the reliability of communications."

As noted above, it is well settled that the fact that references can be modified is not sufficient to establish a prima facie case of obviousness. Language such as "in order to enhance the reliability of communications" is merely an insubstantial statement that the reference can be modified, and does not state any substantive desirability for making the modification. The mere fact that references can be modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the modification. Thus, the motivation provided by the Examiner is improper and/or insufficient and insufficient, as the motivation must establish the desirability for making the modification. No valid suggestion has been made as to why a combination of *Blair* and *Lundby* is desirable. Therefore, the rejection of claim 13 should be withdrawn.

H. The rejection of claim 14.

Claim 14 stands rejected under 35 U.S.C. §103(a) as being unpatentable over *Blair* in view of *Chen*.

1. The recited combination does not teach or suggest all claimed limitations.

The Office Action admits that *Blair* does not teach a "different hub for transmission". The Office Action attempts to cure this deficiency by introducing *Chen*, which the Office

Action alleges to teach using "different hubs for transmission". However, this combination, as presented, does not teach or suggest all limitations of the claimed invention.

Claim 14 defines "using a different hub for said desired RF transmissions[to accommodate said interference profile]". *Chen* does not disclose this limitation. As discussed in the "Field of the Invention": section, *Chen* is directed to "increasing the available data rate". At column 10, lines 15-56 (cited by the Office Action) *Chen* only discloses that a control processor determines which base station is to be used to transmit data to a remote station. *Chen* is silent concerning interference, particularly accommodating an interference profile by using a different hub for RF transmissions. Therefore, Applicants respectfully assert that for at least the above reason claim 14 is patentable over the 35 U.S.C. §103(a) rejection of record.

2. The Office Action does not provide the requisite motivation.

As noted above, the Office Action admits that *Blair* does not teach having "different hub for transmission". The Office Action attempts to cure this deficiency by introducing *Chen*. The motivation for making the combination was presented as follows:

> "It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teaching of Chen to the communication system of Blair in order to increase available data rate."

It is well settled that the fact that references can be combined or modified is not sufficient to establish a prima facie case of obviousness. Such language is merely a statement that the reference can be modified, and does not state any desirability for making the modification. The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *Chen* discloses systems and methods for "increasing the available data rate" in spread spectrum communications systems and is silent concerning RF interference. Therefore, Applicants fail to understand how one striving to mitigate interference present in an unlicensed RF band would be motivated to look to art directed solely to increasing available data rate in spread spectrum technology. Thus, the motivation provided by the Examiner is improper and/or insufficient, as the motivation must establish the desirability for

making the modification. No valid suggestion has been made as to why a combination of *Blair* and *Chen* is desirable. Therefore, the rejection of claim 16 should be withdrawn.

I. The rejection of claim 17.

Claim 17 stands rejected under 35 U.S.C. §103(a) as being unpatentable over *Blair* in view of *Lund*. The Office Action directs its rejection to claim 2. However, the Office Action recites an element of claim 17. Applicants respectfully request clarification. Regardless, the Office Action fails to establish a prima facie case for the obviousness rejection of claim 17.

1. The recited combination does not teach or suggest all claimed limitations.

The Office Action admits that *Blair* does not teach "changing channel polarity". The Office Action attempts to cure this deficiency by introducing *Lund*, which the Office Action alleges to teach "changing channel polarity". However, this combination, as presented, does not teach or suggest all limitations of the claimed invention.

Claim 17 defines "changing polarity of said desired RF transmissions" to accommodate an interference profile. *Lund* does not disclose this limitation. As discussed at column 22, lines 19-24, *Lund* discloses "using amplitude-modulation in response to opposite phases or polarities of an applied signal in a manner such that the average transmitted power at any frequency within the range of frequencies transmitted is maintained within the range of frequencies transmitted is maintained substantially constant and to minimize detection by and interference with other communication systems". Also, disclosed by *Lund* at column 22, lines 35-39 "outputs of opposite phase or polarity of input circuit 223 are applied to a pair of modulator circuits 225 and 226, while outputs of opposite phase or polarity of input circuit 224 are applied to a pair of modulator circuits 227 and 228". Thus, *Lund* teaches the simultaneous use of opposite polarities in a spread spectrum communications system. However, *Lund* fails to teach actively "changing polarity of said desired RF transmissions" (emphasis added) to accommodate an interference profile. Therefore, Applicants respectfully assert that at least for the above reason claim 17 is patentable over the 35 U.S.C. §103(a) rejection of record.

2. The Office Action does not provide the requisite motivation.

The Office Action admits that *Blair* does not teach having "changing channel polarity". The Office Action attempts to cure this deficiency by introducing *Lund*. The motivation for making the combination was presented as follows:

> "It would have obvious to one of ordinary skill in the art at the time the invention was made to provide the teaching of Lund to the communication system of *Blair* in order to minimize interference."

It is well settled that the fact that references can be combined or modified is not sufficient to establish a prima facie case of obviousness. Language such as "in order to minimize interference" is tantamount to a mere statement that the reference can be modified, and does not state any desirability for making the modification. The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. Applicants fail to understand how one striving to mitigate interference present in an unlicensed RF band would be motivated to look to art directed to a spread spectrum communication system operated in licensed RF bands. Thus, the motivation provided by the Examiner is improper and/or insufficient, as the motivation must establish the desirability for making the modification. No valid suggestion has been made as to why a combination of *Blair* and *Lund* is desirable. Therefore, the rejection of claim 17 should be withdrawn.

L. The §103 rejections of claims 3, 5, 8-10, 13, 14, 17, 18 and 20.

Hindsight

Applicants respectfully assert that the Examiner is relying on impermissible hindsight in order to piece together the elements of the claims based on knowledge gleaned from Applicants' disclosure. Applicants assert that without the teachings of Applicants' disclosure one of ordinary skill in the art would not find it obvious to modify the teachings of *Blair*, related to a wireless network transceiver controller, to apply the various interference mitigation techniques taught by the cited secondary references. The interference addressing system of Blair would not be compatible with the interference mitigation techniques taught by the cited secondary references and function of the channel information table used in *Blair*

would be circumvented and thus destroyed by application of the teachings of the various secondary references. The Examiner seems to be relying on the teachings of the present application to conclude that one of ordinary skill in the art would be motivated to modify *Blair* in such a manner.

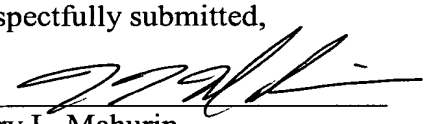
IV. Conclusion

For all the reasons given above, Applicants submit that the pending claims distinguish over the prior art of record under 35 U.S.C. §§102 and 103. Accordingly, Applicants submit that this application is in full condition for allowance. Therefore, the Examiner is respectfully requested to withdraw the outstanding rejection of the claims and to pass this application to issue.

Applicant believes no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 06-2380, under Order No. 60783/P003US/10102074 from which the undersigned is authorized to draw.

Dated: March 26, 2003

Respectfully submitted,

By 

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Version With Markings to Show Changes Made

19. A method for adapting desired RF transmissions to accommodate RF interference said method comprising the steps of:

monitoring an unlicensed RF band for extraneous RF signals;

breaking said extraneous RF signals into interference types, said interference types comprising wideband interference and narrow band interference;

determining at least one characteristic [characteristics] of said interference, said [interface being categorized in at least one of a group of categories consisting of] interference characteristics comprising:

periodic narrow band interference;

intermittent narrow band interference;

[wideband interference;]

periodic wideband interference; and

intermittent wideband interference;

selecting, based on said interference type and said interference characteristics, at least one [of a group of categories of] action to reduce said interference, said actions comprising [group of actions consisting of]:

ceasing transmissions on a channel for a time slot conforming to determinable time frames of said periodic interference;

ceasing transmissions on a channel for a time slot conforming to determinable time frames of said intermittent interference;

adapting modulation of said transmissions;

changing code rate of said transmissions;

adjusting a time sequence of said transmissions to accommodate said periodic interference; and

adjusting a time sequence of said transmissions to accommodate said intermittent interference.